

## REMARKS

Claims 1 – 26 are pending in the application. Claims 1-3, 6, 19-20, and 25-26 have now been amended. New claim 27 is added.

Favorable reconsideration of this rejection in view of the above amendments and the following explanations is respectfully requested.

## INTERVIEW

Examiner is thanked for the Interview graciously granted on this case on Thursday, 19<sup>th</sup> April 2007. At the Interview the Examiner expressed the view that she would favorably consider amendments in which the second partition was clarified as comprising resources, and wherein hardware in the form of a processor was inserted into the system claims. Both of these have accordingly been done.

## Claim Rejections – 35 U.S.C. § 101

Claim 1 has been amended to reflect statutory subject matter. More particularly the claim has been made to include a processor. The processor is configured by the other features to achieve their purpose.

Claims 2-24 are also respectfully believed to constitute statutory subject-matter since they are dependent on claim 1. Claims 26 and claim 27 also recite a processor.

## Claim Rejections – 35 U.S.C. § 103

Claims 1-12, 17-19, and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Fisher, US publication No. 2002/0013847** in view of **Lewis US Patent No. 6,233,576**.

Claims 20, 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Fisher** in view of **Brown, US patent No. 5,941,947**. Claim 21 is rejected in view of the above and further in view of **Shandony US Patent No 6,675,261**.

In view of the Examiner's rejections of an apparatus for pattern matching in light of a citation that does not even mention pattern matching, the independent claims have been amended to more positively recite the term "pattern matching" and to positively recite the role of pattern matching in grouping the nodes. Furthermore, the claims have been amended to clearly distinguish between nodes that could be users and nodes that are resources.

The citation to Fisher teaches efficient use of resources by groups of users. The resources may be pooled and individual users may manage the resources.

Fisher is all about real time management of resources. Who should the resource be given to now in order to maximize communication, is the issue that Fisher deals with. In other words Fisher deals with *actual assignment* of resources. Such an issue is entirely irrelevant to the present invention which is interested in corporate structures and attempts to find out what structure exists based on predetermined relationships. It is not dynamic and neither does it allocate resources. That is to say the present claims are about *discovering* groups that use similar resources whereas Fisher is about *allocating* resources. The discovering of the present application is carried out using pattern matching, the connections of two different nodes are compared. Fisher does not match patterns since he has yet to make the connections.

More particularly, it is clear that Fisher does *not* use *pattern matching* in order to *form groups*. The Examiner is kindly referred to paragraph 0055 of Fisher which states "In this case, each sub-pool represents a logical grouping that the product developer considers significant". This passage means that the product developer defines the grouping according to features that seem significant to him. The passage is *entirely silent* on either *relationships with other nodes* or on *pattern matching*. That is to say it is abundantly clear that pattern matching is one feature *not* used in generating the sub-pools mentioned in paragraph 0055 of Fisher. This distinction of using pattern matching is irrespective of the fact that Fisher *assigns resources* whereas the present invention *discovers who is using* similar resources.

Furthermore paragraph 0055 of Fisher states "Such partitions allow end users to manage uniqueness constraints (via scope) and predefined groups of resources". Contrary to the allegation of the Examiner, paragraph 0055 of Fisher *never once mentions* that there are predefined relationships between users and resources, contrary to the requirement of claim 1. It is true that the users later make use of the resources, but Fisher *never* teaches *predefined* relationships, and thus the claimed feature of having the relationships be examined by a pattern matching unit simply *could not* be provided by Fisher. This is because Fisher has no predefined relationships to analyze.

The present application, by complete contrast with Fisher or any of the other cited art, discloses a role search apparatus for grouping nodes according to *relationships with other nodes*, the nodes having similar relationships being found by an *automatic procedure* well known in the software field *called pattern matching*. Once the patterns have been found then those *nodes having similar patterns* are *grouped together*. Thus the claims, which clearly recite pattern matching, are respectfully believed to be distinguished, irrespective of all other issues raised herein.

The apparatus comprises an input for receiving an arrangement of nodes in at least two partitions. One partition may be that of users and the other partition may be that of resources. A *pattern recognition unit* is associated with the input to search and find relationship patterns amongst the nodes and form a group from the user partition based on relationships with nodes in the resources partition. Similar nodes of the user partition share relationships with similar nodes in the second partition, meaning that similar users have similar access permissions to the same resources. As mentioned, the nodes of the first partition are users of a network and nodes of the second partition are resources on the network. The apparatus then groups users according to the relationship patterns discovered above, which are assumed to correspond to users' roles in the organization. Thus all the engineers in the organization may be identified by their common access to certain resources, and the senior engineers may be identified by higher level access to the same resources. The same applies for accounts staff and the senior accountants.

One possible application is to provide updated corporate tree information as required. Generally as people change their positions in a corporate tree their computer

status is updated quickly but the company literature is updated more slowly. Such an application provides a way to overcome this time lag.

As a further application the apparatus can assign new access permissions automatically to users as their roles in the organization change, based on the permissions held by nodes already in the new role. What is required is merely that the user node is assigned to the group representing his new role.

Fisher et al. teaches a resource allocation mechanism. More particularly Fisher et al discloses a method and system for improving network management in a data communication network by defining one or more pools of network resources and having the resources automatically allocated, listed and checked for uniqueness. As explained above there is *no predefined relationship between nodes*, from which it follows that there can be no attempt to *discover patterns in these predefined relationships*.

Claim 1 of the present application as amended, defines a pattern recognition apparatus realized by a computer device for grouping nodes according to relationships with other nodes. The apparatus comprises an input for receiving *an arrangement of nodes in at least two partitions, the second partition being the resources*. The apparatus comprises also *a pattern recognition unit* that automatically *forms* at least one group in the first partition *from nodes sharing relationships with certain resources*. It is noted that the relationships *already exist* - note the limitation in the claim of "predetermined". The claim requires that the groupings are discovered. That is to say the groups always existed, we just did not know. Now we find the patterns and see that all these people actually belong together.

By contrast Fisher et al does *not* have *either* of *predetermined relationships* or *pattern matching*. On the contrary, Fisher in paragraph 0055 teaches that the sub-pools are logical groupings that the product developer considers significant. Nowhere has it occurred to Fisher to use pattern matching, and the reason is clear. He *does not have* any predetermined relationships on which he could use his pattern matching. In *none* of the passages cited by the Examiner, 0044, 0046, 0053, 0055, is *either* of the concepts of pattern matching or predetermined relationships mentioned or hinted at.

Examiner states in section 10 of the Office Action that Fisher teaches pattern recognition apparatus. Pattern recognition apparatus is believed by the applicant to be

defined as apparatus that can be shown two *different patterns* and decide whether or not they are *similar*. No such teaching is present anywhere in Fisher, certainly not in paragraphs 0044, 0046, 0053 0055 that the Examiner directly cites. Neither is it present in any of the other citations to the Examiner.

Examiner states in the same section that Fisher teaches automatically finding relationship patterns between the nodes. It is respectfully suggested that no relationship patterns between the nodes are found because Fisher does not teach predetermined relationships.

The addition of Lewis does not add the missing features referred to above, namely nodes with predefined relationships, and the use of pattern matching to discover nodes that are similar based on the patterns, followed by grouping the nodes discovered to be similar into the same group.

Independent claim 25 has been amended in the same way to more positively recite the pattern matching and grouping based on discovered similarities in the predetermined relationships, which similarities are found by pattern matching.

Therefore it is respectfully believed that Claim 1 and independent claim 25 should be allowable.

Claims 2-12 and claims 17-19 are respectfully believed to be allowable since they are dependent on allowable claim 1.

Claims 22-24, rejected over Fisher in view of Brown are respectfully believed to be allowable since they are dependent on allowable claim 1.

Independent Claim 26 of the present application, as amended, defines a reverse engineering device for discovering structure in a partitioned nodal arrangement, and includes the same inventive features as referred to above.

Therefore it is respectfully believed that claim 26 should be allowed.

The indication of allowable subject matter in claims 13-16 and 20-21 is noted with appreciation.

New claim 27 is added at this time, and is believed to share the same inventive features as in previous claims.

All of the matters raised by the Examiner have been dealt with and are believed to have been overcome. In view of the foregoing, it is respectfully submitted that all the claims now pending in the application are allowable. An early Notice of Allowance is therefore respectfully requested.

Respectfully submitted,



Martin D. Moynihan  
Registration No. 40,338

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Enclosed:

Petition for Extension (1 Month); and  
Request for Continued Examination (RCE).